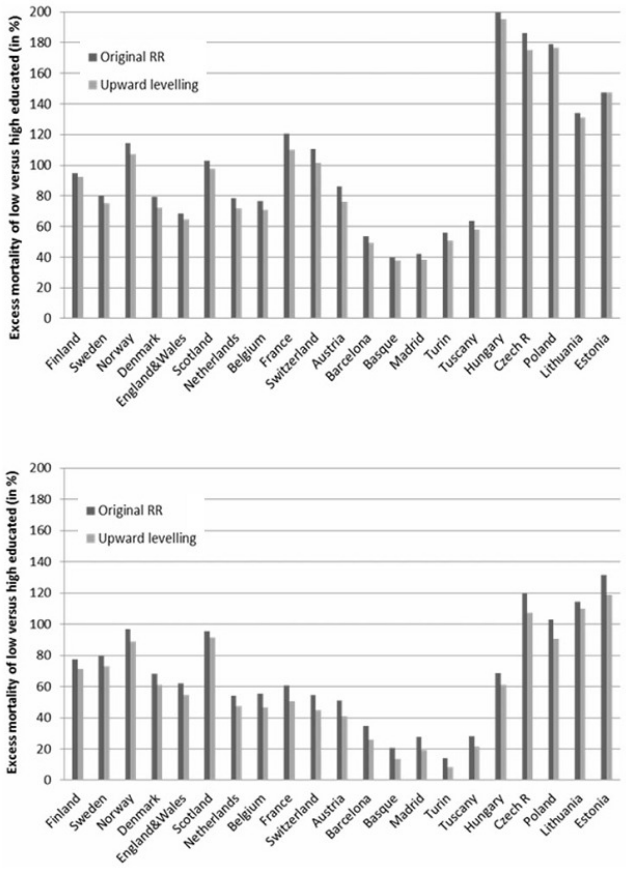
How much does obesity contribute to health inequality? Evidence from 18 European countries

Obesity is an important risk factor for a number of serious diseases such as cancer, diabetes, ischemic heart disease and cardiovascular disease. Secondly, obesity rates differ between groups with different levels of education. Given these two facts it is assumed that obesity also contributes to the problem of health inequalities in many countries. However, quantitative estimates of this contribution and to what extent it is modifiable are scarce. We identify the theoretical potential for reducing health inequalities between educational groups by modifying educational differences in obesity and overweight. In previous publications our team has shown the effect of smoking and other risk factors on social differences in mortality



Reduction of relative inequalities in all-cause mortality for an upward-levelling scenario, i.e. elimination of social inequalities in obesity (upper panel men, lower panel women)

Information on obesity rates by educational groups from 18 European countries comes from national health surveys. Our health indicator is all-cause mortality and obesity-related mortality,

which means deaths from three different cancers, diabetes, ischemic heart disease and cardiovascular disease. Finally, we used results from previous studies for the effect of obesity on mortality. Using these three different types of data it is possible to estimate how much health inequality (=the difference in mortality between educational groups) would decrease in a scenario where all educational groups had the same (low) level of obesity as the high educated. We assume that this is the best possible result of a political intervention or any other kind of social change. Therefore it serves as a benchmark of the maximum potential for the reduction of health inequality that could be achieved by changing obesity rates. We call this an upward levelling scenario because lower educated persons catch up to the better health behavior of the high educated.

Our scenario that assumes an elimination of differences in obesity between educational groups would decrease relative inequality in all-cause mortality between those with high and low education by up to 12% for men and 42% for women. This is shown in the figure where the dark bars show how much higher mortality is among the low educated compared to the high educated. The bright bars represent this mortality disadvantage in our scenario where the contribution of obesity is removed because all educational groups are assumed to have the same level of obesity. For some specific causes of death, about half of the relative inequality in mortality could be reduced in several (mostly Southern European) countries (not shown in the graph).The effect of our scenario is larger in Southern countries because there social differences in obesity are higher. The effect of our scenario is also larger among women because they show larger social differences in obesity than men, which means that the lower educated groups would have to improve more to catch up with the high educated.

The potential reduction of health inequality by an elimination of social inequalities in obesity might be substantial. At the same time this risk factor is by far not sufficient to solve the problem of health inequality, but other important factors, such as smoking and drinking, have to be addressed as well. The reductions in our obesity scenario differ a lot by country, gender, and cause of death, therefore the priority given to obesity as an entry-point for tackling health inequalities should differ between countries and gender. Reducing educational inequalities in obesity would be most effective in southern regions of Europe, particularly among women, and would affect especially health inequality in diabetes and ischemic heart disease.

Publication

Obesity and the potential reduction of social inequalities in mortality: evidence from 21 European populations.
Hoffmann R, Eikemo TA, Kulhánová I, Kulik MC, Looman C, Menvielle G, Deboosere P, Martikainen P, Regidor E, Mackenbach JP
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